

REMARKS

Applicant hereby responds to the Final Office Action mailed January 8, 2007 in relation to the above-identified patent application. In that Office Action, the Examiner withdrew the finality of the prior Office Action of September 27, 2006 based on the arguments provided by the Applicant in its Response filed November 29, 2006. However, in the subject Final Office Action, the Examiner has rejected Claims 1-4, 7-14 and 16-21 under 35 U.S.C. §102(e) as purportedly being anticipated by the Chung reference. Additionally, the Examiner has rejected Claims 5 and 6 under 35 U.S.C. §103(a) as being unpatentable over the combination of the Chung and Matthews et al. references.

Of Claims 1-14 and 16-21 remaining in prosecution in the present application, Claims 1, 13 and 21 are independent in nature, with the remaining claims being either directly or indirectly dependent upon respective ones of independent Claims 1 and 13. For the Examiner's convenience, independent Claim 1, 13 and 21 as currently pending are each reproduced below:

1. A semiconductor package comprising:

a single non-conductive film layer defining opposed top and bottom film surfaces and a peripheral edge, the film layer including a plurality of vias disposed therein;

a plurality of upper leads disposed on the top film surface adjacent respective ones of the vias;

a plurality of lower leads disposed on the bottom film surface adjacent respective ones of the vias, each of the lower leads being electrically connected to a respective one of the upper leads;

at least one transmission line element disposed on the top film surface and electrically connected to at least one of the upper leads;

at least one semiconductor die attached to the top film surface and electrically connected to at least one of the upper leads and the transmission line element; and

a package body disposed on the film layer and extending to the peripheral edge thereof, the package body encapsulating the semiconductor die, the upper

leads, and the transmission line element, and being adhered to the top film surface.

13. A semiconductor package, comprising:

a single non-conductive film layer defining opposed top and bottom film surfaces and a plurality of peripheral film side surfaces, the film layer including a plurality of vias disposed therein;

a plurality of upper leads disposed on the top film surface adjacent respective ones of the vias;

a plurality of lower leads disposed on the bottom film surface adjacent respective ones of the vias, each of the lower leads being electrically connected to a respective one of the upper leads;

a plurality of transmission line elements disposed on the top film surface and electrically connected to at least one of the upper leads; and

a package body encapsulating the upper leads and the transmission line elements, the package body being disposed on the top film surface and defining a plurality of generally vertical body side surfaces which are substantially coplanar with respective ones of the film side surfaces.

21. A semiconductor package comprising:

a single non-conductive film layer defining opposed top and bottom film surfaces and a plurality of peripheral film side surfaces which extend generally perpendicularly between the top and bottom film surfaces;

a plurality of upper leads disposed on the top film surface;

a plurality of lower leads disposed on the bottom film surface, the film layer including means for electrically connecting each of the lower leads to a respective one of the upper leads;

at least one transmission line element disposed on the top film surface and electrically connected to at least one of the upper leads;

at least one semiconductor die attached to the top film surface and electrically connected to at least one of the upper leads and the transmission line element; and

a package body encapsulating the semiconductor die, the upper leads and the transmission line element, the package body being disposed on the top film surface and defining a plurality of generally vertical body side surfaces and a generally horizontal body top surface which is substantially orthogonal to the body side surfaces.

Independent Claims 1, 13 and 21 Are Not Anticipated by the Chung Reference

Independent Claims 1 and 13, in their current form, each recite the feature of “*...a plurality of lower leads disposed on the bottom film surface adjacent respective ones of the vias, each of the lower leads being electrically connected to a respective one of the upper leads...*” Similarly, independent Claim 21 in its current form recites the feature of “*...a plurality of lower leads disposed on the bottom film surface, the film layer including means for electrically connecting each of the lower leads to a respective one of the upper leads...*” Applicant respectfully submits that at least these features of independent Claims 1, 13 and 21 are not shown or described in the cited Chung reference.

In Figure 6 highlighted by the Examiner, the Chung reference discloses a wireless article comprising a substrate 20 having a spaced pair of holes 22, 24 disposed therein and extending therethrough. Formed on each of the opposed top and bottom surfaces of the substrate 20 is an antenna 30. More particularly, the antenna 30 includes a first antenna portion 30a which is formed on the bottom surface of the substrate 20, and a second antenna portion 30b which is formed on the top surface of the substrate 20. The first antenna portion 30a defines opposed ends 34, 39 which are aligned with respective ones of the holes 22, 24. The first antenna portion 30a also defines a series of turns 36a, 37a, 38a.

Similarly, the second antenna portion 30b disposed on the top surface of the substrate 20 defines a series of turns 36b, 37b, 38b. As best seen in Figure 5 of the Chung reference, the outermost turn 36b is conductively connected to conductive material 50 which substantially fills the hole 22. The conductive material 50 which fills the hole 22 is also in conductive communication with the end 39 of the outermost turn 36a of the first antenna portion 30a. The remaining hole 24 is also filled with conductive material 50 which itself conductively communicates with the end 34 defined by the innermost turn 38a

of the first antenna portion 30a. The conductive material 50 filled into the hole 24 transitions into a contact 54 which is disposed on the top surface of the substrate 20 as shown in Figure 5. In this regard, the conductive material 50 filled into the hole 24 is operative to place the contact 54 formed on the top surface of the substrate 20 into conductive communication with the end 34 of the first antenna portion 30a disposed on the opposite, bottom surface of the substrate 20.

One end of the innermost turn 38b of the second antenna portion 30b disposed on the top surface of the substrate 20 extends to and conductively communicates with a conductive contact 52 which is located in close proximity to and spaced from the conductive contact 54. The contacts 52, 54 disposed on the top surface of the substrate 20 accommodate respective ones of the contacts 42, 44 included on an electronic device 40 of the wireless article. In such wireless article, the entirety of the top surface of the substrate 20, including the electronic device 40 and second antenna portion 30b disposed thereon, is covered by a layer 58 of insulating adhesive. As shown in Figure 6, such layer 58 also covers the entirety of the bottom surface of the substrate 20, including the first antenna portion 30a disposed thereon. Indeed, only the peripheral edge of the substrate 20 appears to be exposed in the layer 58.

Applicant respectfully submits that the foregoing description of the wireless article of the Chung reference conclusively demonstrates that the Chung reference is devoid of any teaching or suggestion regarding the bottom surface of the substrate 20 being provided with “*a plurality of lower leads*” which are electrically connected to respective ones of “*a plurality of upper leads*” disposed on the top surface of the substrate 20. As explained above, the only structure disposed on the bottom surface of the substrate 20 is the first antenna portion 30a which defines only the outermost, middle and innermost turns 36a, 37a, 38a.

Thus, Applicant respectfully submits that independent Claims 1, 13 and 21 in their current form are not anticipated by the Chung reference, and are in condition for allowance. Additionally, Applicant respectfully submits that Claims 2-12, 14 and 16-20 are also in condition for allowance as being dependent upon respective allowable base claims.

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On the basis of the foregoing, Applicant respectfully submits that the stated grounds of rejection have been overcome, and that Claims 1-14 and 16-21 are now in condition for allowance. Additionally, Applicant respectfully submits that the present Response does not raise new issues which would require further searching on the part of the Examiner, and therefore respectfully requests that the same be considered and entered by the Examiner. An early Notice of Allowance is therefore respectfully requested.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

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